

A new species of *Coelogyne* (Orchidaceae) from Arunachal Pradesh (India)^a

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Keywords/Mots-clés : *Coelogyne*, description, new taxon/nouveau taxon, orchid flora/flore d'orchidées, taxonomy/taxinomie.

Abstract

A new species of *Coelogyne* (Orchidaceae) from the tropical evergreen forests of the Meaho Wildlife Sanctuary, Mishmi Hills, Arunachal Pradesh, India, is described as *Coelogyne mishmensis*. A detailed description, distribution, ecology and relevant taxonomic notes are provided. The new species is compared to its closest relatives, *Coelogyne fimbriata*, *Coelogyne arunachalensis* and *Coelogyne ovalis*.

Résumé

Une nouvelle espèce de *Coelogyne* (Orchidaceae), d'Arunachal Pradesh (Inde) – Une nouvelle espèce de *Coelogyne* (Orchidaceae), originaire des forêts pérennes tropicales du *Mehao Wildlife Sanctuary*, Mishmi Hills, Arunachal Pradesh, Inde, est décrite sous le nom de *Coelogyne mishmensis*. L'article fournit sa description détaillée, des données sur sa distribution géographique et son écologie ainsi que des notes taxinomiques. La nouvelle espèce est comparée à ses parents les plus proches, *Coelogyne fimbriata*, *Coelogyne arunachalensis* et *Coelogyne ovalis*.

Introduction

Coelogyne is an Asiatic genus in the family Orchidaceae that can be found from sea level to the top of the tropical mountains. It was established in 1821 by John Lindley in his *Collectanea Botanica*, where he described the genus based on *Coelogyne cristata* and *Coelogyne punctulata*. About 190

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species, two subspecies and twelve varieties giving a total of 204 taxa (Clayton, 2002) are distributed from Sri-Lanka and India to South East Asia including the Philippines, South China, Malaysia, Java, Sumatra, New Guinea, the New Hebrides and Fiji (Barua, 2001); in India thirty nine specific and seven intraspecific taxa have been reported (Misra, 2007).

Coelogyne are a common epiphyte of Arunachal Pradesh (India). While on a field tour to the forest area of Mehao Wildlife Sanctuary, Mishmi Hills, in February 2012, the author collected an unidentified epiphytic orchid in vegetative condition. The plant was cultivated at the Regional Orchids Germplasm Conservation and Propagation Centre (Assam Circle), Assam and kept under observation. It started flowering in July, 2013. After four years observation and the critical examination of the species, the scrutiny of the available literature (King & Pantling, 1898; Seidenfaden, 1975; Pradhan, 1979; Das & Jain, 1980; Chowdhery, 1998; Gravendeel, 2000; Clayton, 2002; Pearce & Cribb, 2002; Lucksom, 2007; Chen *et al.*, 2009; Rao, 2010; Gogoi *et al.*, 2015) and herbarium matching, it was found to represent a new species, that is described and illustrated here.

Coelogyne mishmensis Gogoi, sp. nov.

Typus: India, Arunachal Pradesh, Lower Dibang Valley District, Mehao Wildlife Sanctuary, 800m, 0765, 24 July 2016, Khyanjeet Gogoi [Holo 0765 A, CAL; Iso 0765 B, DU; Iso 0765 C, TOSEHIM (The Orchid Society of Eastern Himalaya)].

Description: rhizome creeping, woody, slender, 0.25-0.3 cm across, internodes 0.5-1 cm long, covered with imbricating sheaths, oldest parts having sheath-scars; roots tufted, fibrous; pseudobulbs green, 4.5-12 cm apart on rhizome, ovoid to cylindric, 4.5-8 × 1.2-1.5 cm, glossy, sheathed at base, with 2 leaves at apex; sheaths ovate, 1.2-6 cm long, deciduous when old; leaf elliptic-oblong or oblong-lanceolate, 10-16.5 × 3.6-4.3 cm, cuneate at base, apex acute, petiole up to 1 cm long; inflorescence hysteranthous, peduncle 3-3.5 cm long, base covered with several tubular sheaths, sheaths ovate-lanceolate or elliptic, acute, convolute, membranous, rachis zigzag, 5-6 cm long, often with 1 flower opening successively, apex of rachis enclosed in several bracts; floral bracts yellowish, ovate-lanceolate, 3-3.5 × 1-1.2 cm, exceeding the pedicel and ovary, pedicel and ovary 1-1.2 cm long; flowers 4-4.5 cm across, widely open, sepals and petals pale yellow or pale yellowish green, lip pale yellow marked with dark purplish brown stripes; dorsal sepal oblong-lanceolate, acute, 2.6-3 × 0.7-0.8 cm, reflexed,

lateral sepals linear-lanceolate, acute, 2.6-3 × 0.6-0.7 cm, reflexed; petals linear-filiform, slightly narrow in the middle, acute, 2.4-2.6 × 0.1-0.15 cm, reflexed; lip 2.4-2.5 cm long, 3-lobed, recurved; lateral lobes 0.5 × 0.5 cm, erect, subovate, acute or obtuse, front margins fimbriate, mid-lobe orbicular, reflexed, 1.5-1.7 × 1.4-1.6 cm, truncate at apex, margin densely ciliate, callus with 2 uniformly undulate lamellae extending from the base to near the apex of the mid-lobe and between them, at the base, with 1 short lamella; column slightly arcuate, 1.3-1.4 cm long, on both sides of the column apex expanding slightly to form a winged hood, apex irregularly incised or dentate; pollinia 4 in two pairs, yellow, unequal. Plate 1.

Flowering: July-October.

Habitat: growing as epiphyte in tropical evergreen forests.

Distribution: Arunachal Pradesh, India (Mehao Wildlife Sanctuary, Lower Dibang Valley District).

Etymology: the specific epithet is derived from the type locality, Mishmi Hills, Arunachal Pradesh, India.

Note: the new species is similar in its habit to *Coelogyné arunachalensis* H.J.Chowdhery & G.D.Pal, *Coelogyné fimbriata* Lindley and *Coelogyné ovalis* Lindley, but can be easily distinguished by the presence of 4-4.5 cm across widely open flowers, reflexed sepals and petals, densely ciliate margins of lip, callus with 2 uniformly undulate lamellae and slightly winged column. The basic distinguishing characters are given in Table 1.

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Table 1: Distinguishing characters between *Coelogyne mishmensis*, *Coelogyne arunachalensis*, *Coelogyne fimbriata* and *Coelogyne ovalis*.

Character	<i>Coelogyne mishmensis</i>	<i>Coelogyne arunachalensis</i>	<i>Coelogyne fimbriata</i>	<i>Coelogyne ovalis</i>
Pseudobulb	4.5-12 cm apart on rhizome, 4.5-8 × 1.2-1.5 cm	2-3 cm apart on rhizome, 4.5-6 × 1-2 cm	2-8 cm apart on rhizome, 2.5-5 × 1.3 cm	5-7 cm apart on rhizome, 3-6 cm × 1.5 cm
Flower	4-4.5 cm across, widely open, sepals and petals pale yellow or pale yellowish green, lip pale yellow marked with dark purplish brown stripes	not widely spreading, 2.5-3 cm across, sepals, petals and lip yellowish	3-3.5 cm across, pale yellow with red stripes on lip	3-4 cm across, greenish yellow with purplish red stripes on lip
Sepals	dorsal sepal oblong-lanceolate, reflexed, 2.6-3 × 0.7-0.8 cm; lateral sepals linear-lanceolate, reflexed, 2.6-3 × 0.6-0.7 cm	dorsal sepal erect, tip slightly reflexed, 2.5-2.6 × 1.1-1.2 cm; lateral sepals oblong-lanceolate, slightly reflexed at tip, 2.6-2.7 × 1-1.1 cm	dorsal sepal lanceolate 2 × 0.8 cm; lateral sepals lanceolate 2 × 0.6 cm	dorsal sepal ovate-lanceolate, 2.7 × 1.3 cm; lateral sepals lanceolate, reflexed, 3 × 0.7 cm
Lip	mid-lobe margin densely ciliate; callus with 2 uniformly undulate lamellae	mid-lobe margins fimbriate; callus with 2 irregularly undulate lamellae	mid-lobe margin fimbriate, apex obtuse; callus with 2 irregularly undulate lamellae	mid-lobe margin fimbriate; callus with 2 irregularly undulate lamellae
Column	column apex slightly winged	column broadly winged	column winged	column broadly winged

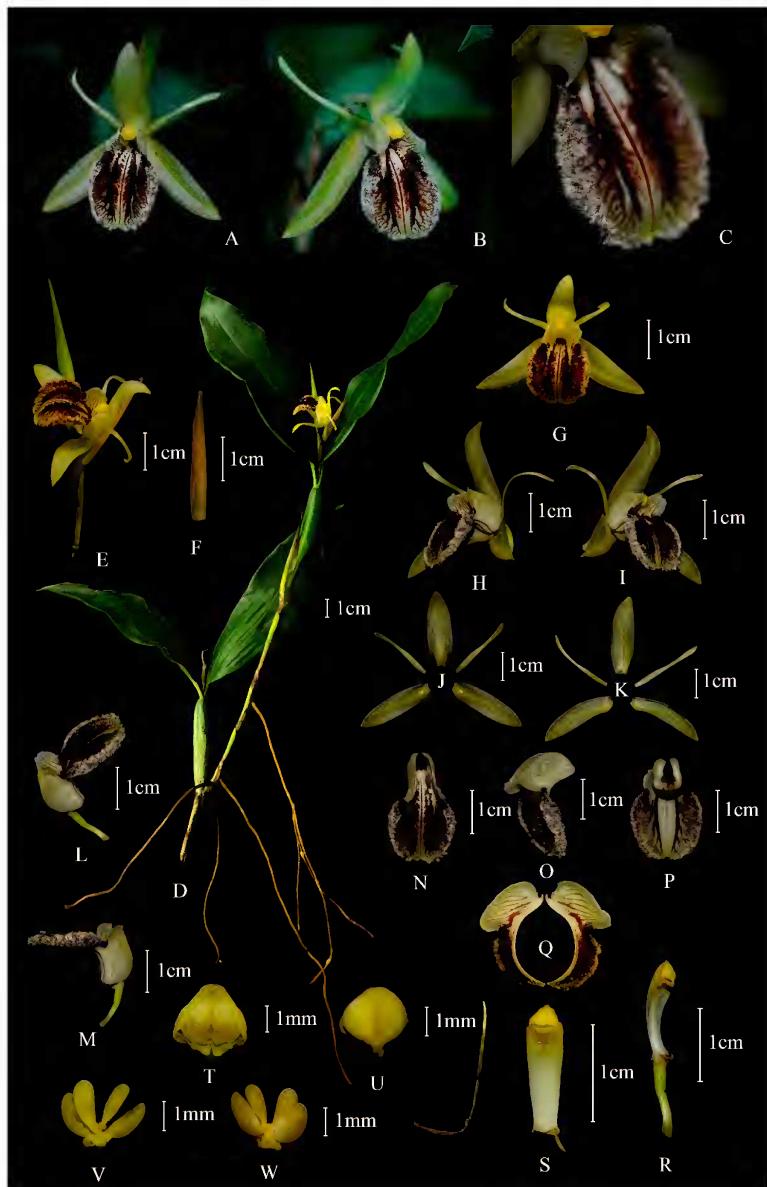


Plate 1: *Coelogyne mishmensis*

A, B: flower (close view); C: lip; D: habit; E: inflorescence; F: floral bract; G, H, I: flower; J, K: perigone, ventral and dorsal views; L, M: lip with ovary and column; N, O, P: lip; Q: longitudinal section of the lip showing lamellae; R: pedicel, ovary and column; S: column; T, U: anther, dorsal and ventral views; V, W: pollinia

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